

Release notes for ENDF/B Development n-054\_Xe\_135  
evaluation

**ENDF**  
**B-VII**.dev

April 26, 2017

• psyche Warnings:

1. Strength function in URR not in agreement with PSYCHE's expectations  
*FILE 2 / SECTION 151 / ISOTOPE MASS = 135. L = 0 / STRENGTH FUNCTION IS 4.18352E-02 / STRENGTH FUNCTION 4.18352E-02 / LIES OUTSIDE LIMITS 1.00000E-05 TO 1.00000E-04 (0): URR str. ftn.*

```
FILE 2
SECTION 151
ISOTOPE MASS = 135. L = 0
STRENGTH FUNCTION IS 4.18352E-02
STRENGTH FUNCTION 4.18352E-02
... [1 more lines]
```

2. Strength function in URR not in agreement with PSYCHE's expectations  
*FILE 2 / SECTION 151 / ENERGY = 1.90000E+02. STRENGTH FUNCTION IS 1.04001E-04 / STRENGTH FUNCTION 1.04001E-04 / LIES OUTSIDE LIMITS 1.00000E-05 TO 1.00000E-04 (0): URR str. ftn.*

```
FILE 2
SECTION 151
ENERGY = 1.90000E+02. STRENGTH FUNCTION IS 1.04001E-04
STRENGTH FUNCTION 1.04001E-04
LIES OUTSIDE LIMITS 1.00000E-05 TO 1.00000E-04
... [11 more lines]
```

3. Strength function in URR not in agreement with PSYCHE's expectations  
*FILE 2 / SECTION 151 / ENERGY = 1.90000E+02. STRENGTH FUNCTION IS 1.04001E-04 / STRENGTH FUNCTION 1.03993E-04 / LIES OUTSIDE LIMITS 1.00000E-05 TO 1.00000E-04 (0): URR str. ftn.*

```
FILE 2
SECTION 151
ENERGY = 1.90000E+02. STRENGTH FUNCTION IS 1.04001E-04
STRENGTH FUNCTION 1.03993E-04
LIES OUTSIDE LIMITS 1.00000E-05 TO 1.00000E-04
```

4. Strength function in URR not in agreement with PSYCHE's expectations  
*FILE 2 / SECTION 151 / ENERGY = 1.90000E+02. STRENGTH FUNCTION IS 1.04001E-04 / STRENGTH FUNCTION 1.03995E-04 / LIES OUTSIDE LIMITS 1.00000E-05 TO 1.00000E-04 (0): URR str. ftn.*

```
FILE 2
SECTION 151
ENERGY = 1.90000E+02. STRENGTH FUNCTION IS 1.04001E-04
STRENGTH FUNCTION 1.03995E-04
LIES OUTSIDE LIMITS 1.00000E-05 TO 1.00000E-04
```

5. Strength function in URR not in agreement with PSYCHE's expectations  
*FILE 2 / SECTION 151 / ENERGY = 1.90000E+02. STRENGTH FUNCTION IS 1.04001E-04 / STRENGTH FUNCTION 1.04004E-04 / LIES OUTSIDE LIMITS 1.00000E-05 TO 1.00000E-04 (0): URR str. ftn.*

```

FILE 2
SECTION 151
ENERGY = 1.90000E+02. STRENGTH FUNCTION IS 1.04001E-04
STRENGTH FUNCTION 1.04004E-04
LIES OUTSIDE LIMITS 1.00000E-05 TO 1.00000E-04

```

6. Strength function in URR not in agreement with PSYCHE's expectations  
*FILE 2 / SECTION 151 / ENERGY = 1.90000E+02. STRENGTH FUNCTION IS 1.03999E-04 / STRENGTH FUNCTION 1.03999E-04 / LIES OUTSIDE LIMITS 1.00000E-05 TO 1.00000E-04 (0): URR str. ftn.*

```

FILE 2
SECTION 151
ENERGY = 1.90000E+02. STRENGTH FUNCTION IS 1.03999E-04
STRENGTH FUNCTION 1.03999E-04
LIES OUTSIDE LIMITS 1.00000E-05 TO 1.00000E-04
... [11 more lines]

```

7. Strength function in URR not in agreement with PSYCHE's expectations  
*FILE 2 / SECTION 151 / ENERGY = 1.90000E+02. STRENGTH FUNCTION IS 1.03999E-04 / STRENGTH FUNCTION 1.04000E-04 / LIES OUTSIDE LIMITS 1.00000E-05 TO 1.00000E-04 (0): URR str. ftn.*

```

FILE 2
SECTION 151
ENERGY = 1.90000E+02. STRENGTH FUNCTION IS 1.03999E-04
STRENGTH FUNCTION 1.04000E-04
LIES OUTSIDE LIMITS 1.00000E-05 TO 1.00000E-04
... [2 more lines]

```

- recent Warnings:

1. Statistical weight of certain L values were incorrect  
*0: RRR goof (a)*

```

Calculate Cross Sections from Resonance Parameters (RECENT 2015-1)
=====
Retrieval Criteria----- MAT
File 2 Mimimum Cross Section- 1.0000E-10 (Standard Option)
Reactions with No Background- Output (Resonance Contribution)
... [476 more lines]

```

- fudge-4.0 Warnings:

1. Missing a channel with a particular angular momenta combination  
*resonances / resolved (Error # 1): missingResonanceChannel*

```

WARNING: Missing a channel with angular momenta combination L = 0, J = 0.0 and S = 0.0 for "capture"
WARNING: Missing a channel with angular momenta combination L = 0, J = 1.0 and S = 1.0 for "capture"

```

2. Potential scattering hasn't converted, you need more L's!  
*resonances / resolved (Error # 2): potentialScatteringNotConverged*

```

WARNING: Potential scattering hasn't converged by L=0 at E=190.0 eV, xs[0]/xs[0]=100.0% > 0.1%

```

3. Cross section does not match sum of linked reaction cross sections  
*crossSectionSum label 0: total (Error # 0): CS Sum.*

WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 0.62%

4. Cross section does not match sum of linked reaction cross sections  
*crossSectionSum label 1: (z,n) (Error # 0): CS Sum.*

WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 0.15%

• fudge-4.0 Errors:

1. The spin statistical weights are off, indicating missing channels  
*resonances / resolved / MultiLevel\_BreitWigner (Error # 0): badSpinStatisticalWeights*

WARNING: The spin statistical weights for L=0 sums to 0.625, but should sum to 1.0. You have too few channels for

2. Calculated and tabulated Q values disagree.  
*reaction label 18: n[multiplicity:'2'] + Xe134 (Error # 0): Q mismatch*

WARNING: Calculated and tabulated Q-values disagree: -6654807.106567383 eV vs -6.4571e6 eV!

3. Calculated and tabulated Q values disagree.  
*reaction label 19: n[multiplicity:'3'] + Xe133 (Error # 0): Q mismatch*

WARNING: Calculated and tabulated Q-values disagree: -15207015.78973389 eV vs -1.49962e7 eV!

4. Calculated and tabulated Q values disagree.  
*reaction label 20: n + H1 + I134 (Error # 0): Q mismatch*

WARNING: Calculated and tabulated Q-values disagree: -9924460.503677368 eV vs -9829630. eV!

5. Calculated and tabulated Q values disagree.  
*reaction label 21: n + H2 + I133 (Error # 0): Q mismatch*

WARNING: Calculated and tabulated Q-values disagree: -13957102.9568634 eV vs -1.36636e7 eV!

6. Calculated and tabulated Q values disagree.  
*reaction label 22: Xe136 + gamma (Error # 0): Q mismatch*

WARNING: Calculated and tabulated Q-values disagree: 7788475.217636108 eV vs 7990390. eV!

7. Calculated and tabulated Q values disagree.  
*reaction label 23: n + He4 + Te131 (Error # 0): Q mismatch*

WARNING: Calculated and tabulated Q-values disagree: -3923422.891265869 eV vs -3726890. eV!

8. Calculated and tabulated Q values disagree.  
*reaction label 24: H1 + I135\_s (Error # 0): Q mismatch*

WARNING: Calculated and tabulated Q-values disagree: -2135996.830551147 eV vs -1927530. eV!

9. Calculated and tabulated Q values disagree.  
*reaction label 25: H2 + I134\_s (Error # 0): Q mismatch*

WARNING: Calculated and tabulated Q-values disagree: -7699894.402740479 eV vs -7519510. eV!

10. Calculated and tabulated Q values disagree.  
*reaction label 26: H3 + I133\_s (Error # 0): Q mismatch*

WARNING: Calculated and tabulated Q-values disagree: -7699870.01625061 eV vs -7478460. eV!

11. Calculated and tabulated Q values disagree.  
*reaction label 27: He4 + Te132\_s (Error # 0): Q mismatch*

WARNING: Calculated and tabulated Q-values disagree: 4120605.488586426 eV vs 4361190. eV!

- njoy2012 Warnings:

1. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!

*group...compute self-shielded group-averaged cross-sections (0): GROUPR/conver (0)*

---message from conver---cannot do complete particle production for mt= 16  
only mf4/mf5 provided

2. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!

*group...compute self-shielded group-averaged cross-sections (1): GROUPR/conver (0)*

---message from conver---cannot do complete particle production for mt= 17  
only mf4/mf5 provided

3. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!

*group...compute self-shielded group-averaged cross-sections (2): GROUPR/conver (0)*

---message from conver---cannot do complete particle production for mt= 22  
only mf4/mf5 provided

4. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!

*group...compute self-shielded group-averaged cross-sections (3): GROUPR/conver (0)*

---message from conver---cannot do complete particle production for mt= 28  
only mf4/mf5 provided

5. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!

*group...compute self-shielded group-averaged cross-sections (4): GROUPR/conver (0)*

---message from conver---cannot do complete particle production for mt= 32  
only mf4/mf5 provided

6. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!  
*grouppr...compute self-shielded group-averaged cross-sections (5): GROUPR/conver (0)*

---message from conver---cannot do complete particle production for mt= 91  
only mf4/mf5 provided